

IN THE CLAIMS

Please amend claims 105, 117, 119, and 120, as shown below. The following listing of claims replaces all prior listings.

1-104. (Canceled).

105.(Currently amended) A method for delivering a therapeutically beneficial compound into a cell in vitro or in vivo, comprising:
administering to the cell a composition, the composition comprising said therapeutically beneficial compound ~~to be delivered~~ and an organic halide ~~to form a mixture~~, wherein the said mixture composition does not comprise a liposome; and
applying ultrasound to said mixture sufficient to induce uptake of said therapeutically beneficial compound into said cell.

106.(Withdrawn) The method of claim 105 wherein said compound to be delivered is an exogenous nucleic acid sequence.

107.(Withdrawn) The method of claim 106 wherein said organic halide is selected from the group consisting of 1 -bromo-nonafluorobutane; perfluorooctyl iodide; perfluorooctyl bromide; 1 -chloro-1 -fluoro-1 -bromomethane; 1,1,1 -trichloro-2,2,2-trifluoroethane; 1,2-dichloro-2,2-difluoroethane; 1,1-dichloro-1,2-difluoroethane; 1, 2-dichloro-1,1,3 - trifluoropropane; 1 -bromoperfluorobutane; 1-bromo-2,4-difluorobenzene; 2-iodo-1,1,1-trifluoroethane; 5-bromovaleryl chloride; 1,3-dichlorotetrafluoroacetone; bromine pentafluoride; 1-bromo-1,1,2,3,3,3-hexafluoropropane; 2-chloro 1,1,1,4,4,4-hexafluoro-2-butene; 2-chloropentafluoro-1, 3-butadiene; iodotrifluoroethylene; 1,1,2-trifluoro-2-chloroethane; 1,2-difluorochloroethane; 1,1 -difluoro-2-chloroethane; 1,1 -dichlorofluoroethane; heptafluoro-2-iodopropane; bromotrifluoroethane; chlorotrifluoromethane; dichlorodifluoromethane; dibromofluoromethane; chloropentafluoroethane; bromochlorodifluoromethane; dichloro-1,1,2,2-tetrafluoroethane; 1,1,1,3,3-pentafluoropentane; perfluorotributylamine;

perfluorotripropylamine; 3-fluorobenzaldehyde; 2-fluoro-5-nitrotoluene; 3-fluorostyrene; 3,5-difluoroaniline; 2,2,2-trifluoroethylacrylate; 3-(trifluoromethoxy)-acetophenone; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; 1-fluorobutane; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; perfluoro-4 methylquinolizidine; perfluoro-N-methyl-decahydroquinone; perfluoro-N-methyl-decahydroisoquinone; perfluoro-N-cyclohexyl-pyrrolidine; tetradecaperfluoroheptane; dodecaperfluorocyclohexane; perfluoromethane; perfluoroethane; perfluoropropane; perfluorobutane; perfluoropentane; perfluorohexane; perfluoroheptane; perfluorooctane; perfluorononane; perfluorodecane; perfluorododecane; perfluoro-2-methyl-2-pentene; perfluorocyclohexane; perfluorodecalin; perfluorododecalin; perfluoropropylene; perfluorocyclobutane; perfluoro-2-butyne; perfluoro-2-butene; perfluorobuta-1,3-diene; perfluorobutylethyl ether; bis(perfluoroisopropyl) ether; bis(perfluoropropyl) ether; perfluorotetrahydropyran; perfluoromethyl tetrahydrofuran; perfluoro t-butyl methyl ether; perfluoro isobutyl methyl ether; perfluoro n-butyl methyl ether; perfluoro isopropyl ethyl ether; perfluoro n-propyl ethyl ether; perfluoro cyclobutyl methyl ether; perfluoro cyclopropyl ethyl ether; perfluoro isopropyl methyl ether; perfluoro n-propyl methyl ether; perfluoro diethyl ether; perfluoro cyclopropyl methyl ether; perfluoro methyl ethyl ether; perfluoro dimethyl ether; sulfur hexafluoride; and selenium hexafluoride.

108.(Previously presented) The method of claim 105 wherein said administering step is conducted concurrently with said applying step.

109.(Previously presented) The method of claim 105 wherein said applying step is conducted prior to said administering step.

110.(Previously presented) The method of claim 105 wherein said organic halide is selected from the group consisting of 1 -bromo-nonafluorobutane; perfluorooctyl iodide; perfluorooctyl bromide; 1 -chloro-1 -fluoro-1 -bromomethane; 1,1,1 -trichloro-2,2,2-trifluoroethane; 1,2-dichloro-2,2-difluoroethane; 1,1-dichloro-1,2-difluoroethane; 1, 2-dichloro-1,1,3 - trifluoropropane; 1-bromoperfluorobutane; 1-bromo-2,4-difluorobenzene; 2-iodo-1,1,1-trifluoroethane; 5-bromovaleryl chloride; 1,3-dichlorotetrafluoroacetone; bromine pentafluoride;

3-bromo-1,1,2,3,3,3-hexafluoropropane; 2-chloro 1,1,1,4,4,4-hexafluoro-2-butene; 2-chloropentafluoro-1, 3-butadiene; iodotrifluoroethylene; 1,1,2-trifluoro-2-chloroethane; 1,2-difluorochloroethane; 1,1 -difluoro-2-chloroethane; 1,1 -dichlorofluoroethane; heptafluoro-2-iodopropane; bromotrifluoroethane; chlorotrifluoromethane; dichlorodifluoromethane; dibromofluoromethane; chloropentafluoroethane; bromochlorodifluoromethane; dichloro-1,1,2,2-tetrafluoroethane; 1,1,1,3,3-pentafluoropentane; perfluorotributylamine; perfluorotripropylamine; 3-fluorobenzaldehyde; 2-fluoro-5-nitrotoluene; 3-fluorostyrene; 3,5-difluoroaniline; 2,2,2-trifluoroethylacrylate; 3-(trifluoromethoxy)-acetophenone; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; 1-fluorobutane; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; perfluoro-4 methylquinolizidine; perfluoro-N-methyl-decahydroquinone; perfluoro-N-methyl-decahydroisoquinone; perfluoro-N-cyclohexyl-pyrrolidine; tetradecaperfluoroheptane; dodecaperfluorocyclohexane; perfluoromethane; perfluoroethane; perfluoropropane; perfluorobutane; perfluoropentane; perfluorohexane; perfluoroheptane; perfluorooctane; perfluorononane; perfluorodecane; perfluorododecane; perfluoro-2-methyl-2-pentene; perfluorocyclohexane; perfluorodecalin; perfluorododecalin; perfluoropropylene; perfluorocyclobutane; perfluoro-2-butyne; perfluoro-2-butene; perfluorobuta-1,3-diene; perfluorobutylethyl ether; bis(perfluoroisopropyl) ether; bis(perfluoropropyl) ether; perfluorotetrahydropyran; perfluoromethyl tetrahydrofuran; perfluoro t-butyl methyl ether; perfluoro isobutyl methyl ether; perfluoro n-butyl methyl ether; perfluoro isopropyl ethyl ether; perfluoro n-propyl ethyl ether; perfluoro cyclobutyl methyl ether; perfluoro cyclopropyl ethyl ether; perfluoro isopropyl methyl ether; perfluoro n-propyl methyl ether; perfluoro diethyl ether; perfluoro cyclopropyl methyl ether; perfluoro methyl ethyl ether; perfluoro dimethyl ether; sulfur hexafluoride; and selenium hexafluoride.

111.(Previously presented) The method of claim 110 wherein said administering step is conducted concurrently with said applying step.

112.(Previously presented) The method of claim 110 wherein said applying step is conducted prior to said administering step.

113.(Previously presented) The method of claim 105 wherein said compound to be

delivered is selected from the group consisting of mitotic inhibitors, a vinca alkaloid, radiopharmaceutical, radioactive iodine, phosphorus isotopes, cobalt isotopes, hormones, progestins, estrogens, antiestrogens, antihelminthics, antimalarials, antituberculosis, immune sera, antitoxins, antivenins, rabies prophylaxis products, bacterial vaccines, viral vaccines, aminoglycosides, respiratory products, xanthine derivatives, theophylline, aminophylline, thyroid therapeutics, iodine salts, anti-thyroid agents, cardiovascular products, chelating agents, mercurial diuretics, cardiac glycosides, glucagons, blood products, parenteral iron, hemin, hematoporphyrins, targeting ligands, peptides, antibodies, antibody fragments, biological response modifiers, muramyl dipeptide, muramyl tripeptide, microbial cell wall components, lymphokines, bacterial endotoxin, lipopolysaccharide, macrophage activation factor, subunits of bacteria, the synthetic dipeptide N-acetyl-muramyl-L-alanyl-D-isoglutamine, antifungal agents, ketoconazole, nystatin, griseofulvin, flucytosine (5-fc), miconazole, amphotericin B, toxins, ricin, immunosuppressants, cyclosporins, antibiotics, b-lactam, sulfazecin, hormones, growth hormone, melanocyte stimulating hormone, estradiol, beclomethasone dipropionate, betamethasone, betamethasone acetate, betamethasone sodium phosphate, betamethasone disodium phosphate, betamethasone sodium phosphate, cortisone acetate, dexamethasone, dexamethasone acetate, dexamethasone sodium phosphate, flunisolide, hydrocortisone, hydrocortisone acetate, hydrocortisone cypionate, hydrocortisone sodium phosphate, hydrocortisone sodium succinate, methylprednisolone, methylprednisolone acetate, methylprednisolone sodium succinate, paramethasone acetate, prednisolone, prednisolone acetate, prednisolone sodium phosphate, prednisolone tebutate, prednisone, triamcinolone, triamcinolone acetonide, triamcinolone diacetate, triamcinolone hexacetonide, fludrocortisone acetate, oxytocin, vasopressin, vitamins, cyanocobalamin neionic acid, retinoids, retinol palmitate, a-tocopherol, peptides, enzymes, manganese superoxide dismutase, alkaline phosphatase, anti-allergens, amlexanox, anticoagulation agents, phenprocoumon, heparin, tissue plasminogen activators (TPA), streptokinase, urokinase, circulatory drugs, propranolol, metabolic potentiators, glutathione, antibiotics, p-aminosalicylic acid, isoniazid, capreomycin sulfate cycloserine, ethambutol hydrochloride ethionamide, pyrazinamide, rifampin, streptomycin sulfate dapsone, chloramphenicol, neomycin, ceflaxor, cefadroxil, cephalixin,

cephadrine erythromycin, clindamycin, Hncomycin, amoxicillin, ampicillin, bacampicillin, carbenicillin, dicloxicillin, cyclacillin, picloxicillin, hetacillin, methicillin, nafcillin, oxacillin, penicillin (G and V), ticarcillin rifampin, tetracycline, antivirals, acyclovir, DDI, Foscarnet, zidovudine, ribavirin and vidarabine monohydrate, antianginals, diltiazem, nifedipine, verapamil, erythritol tetranitrate, isosorbide dinitrate, nitroglycerin (glyceryl trinitrate), pentaerythritol tetranitrate, antiinflammatories, diflusal, ibuprofen, indomethacin, meclufenamate, mefenamic acid, naproxen, oxyphenbutazone, phenylbutazone, piroxicam, sulindac, tolmetin, aspirin, salicylates, antiprotozoans, chloraquine, hydroxychloraquine, metranidazole, quinine meglumine antimonite, antirheumatics, penicillamine, narcotics, paregoric, opiates, codeine, heroin, methadone, morphine, opium, cardiac glycosides, deslanoside, digitoxin, digoxin, digitalin, digitalis, neuromuscular blockers, atracurium nesylate, gallamine triethiodide, hexaflorinium bromide, metrocurine iodide, pancurium bromide, succinylcholine chloride (suxamethonium chloride), rubocurarine chloride, vecuronium bromide, sedatives, amobarbital, amobarbital sodium, aprobarbital, butabarbital sodium, chloral hydrate, ethchlorvynol, ethinamate, flurazepam hydrochloride, glutethimide, methotrimeprazine hydrochloride, methypylon, midazolam hydrochloride, paraldehyde, pentobarbital, pentobarbital sodium, secobarbital sodium, tulbutal, temazepam and triazolam, local anesthetics, bupivacaine hydrochloride, chloroprocaine hydrochloride, etidocaine hydrochloride, lidocaine hydrochloride, mepivacaine hydrochloride, procaine hydrochloride, tetracaine hydrochloride, general anaesthetics, droperidol, etamine hydrochloride, methohexital sodium, thiopental sodium, antineoplastic agents, methotrexate, fluorouracil, adriamycin, mitomycin, ansamitomycin, bleomycin, cystein arabinoside, arabinosyl adenine, mercaptopolylysine, vincristine, busulfan, chlorambucil, azidothymidine, melphalan, PAM, L-PAM, phenylalanine mustard, mercaptopurine, mitotane, procarbazine hydrochloride dactinomycin (actinomycin D), danorubicin hydrochloride, dosorubicin hydrochloride, taxol, plicamycin (mithramycin), aminoglutethimide, estramustine phosphate sodium, flutamide, leuprolide acetate, megestrol acetate, tamoxifen citrate, testolactone, trilostane, amsacrine (m-AMSA), asparaginase, etoposide (VP-16), interferon a-2a, interferon a -2b, teniposide (VM-26), vinblastine sulfate (VLB), vincristine sulfate, hydroxyurea, procarbazine, dacarbazine and contrast agents.

114. (Previously presented) The method of claim 113 wherein said administering step is conducted concurrently with said applying step.

115. (Previously presented) The method of claim 113 wherein said applying step is conducted prior to said administering step.

116. (Previously presented) The method of claim 113 wherein said organic halide is selected from the group consisting of 1-bromo-nonafluorobutane; perfluorooctyl iodide; perfluorooctyl bromide; 1-chloro-1-fluoro-1-bromomethane; 1,1,1-trichloro-2,2,2-trifluoroethane; 1,2-dichloro-2,2-difluoroethane; 1,1-dichloro-1,2-difluoroethane; 1,2-dichloro-1,1,3-trifluoropropane; 1-bromoperfluorobutane; 1-bromo-2,4-difluorobenzene; 2-iodo-1,1,1-trifluoroethane; 5-bromovaleryl chloride; 1,3-dichlorotetrafluoroacetone; bromine pentafluoride; 1-bromo-1,1,2,3,3,3-hexafluoropropane; 2-chloro 1,1,1,4,4,4-hexafluoro-2-butene; 2-chloropentafluoro-1,3-butadiene; iodotrifluoroethylene; 1,1,2-trifluoro-2-chloroethane; 1,2-difluorochloroethane; 1,1-difluoro-2-chloroethane; 1,1-dichlorofluoroethane; heptafluoro-2-iodopropane; bromotrifluoroethane; chlorotrifluoromethane; dichlorodifluoromethane; dibromofluoromethane; chloropentafluoroethane; bromochlorodifluoromethane; dichloro-1,1,2,2-tetrafluoroethane; 1,1,1,3,3-pentafluoropentane; perfluorotributylamine; perfluorotripropylamine; 3-fluorobenzaldehyde; 2-fluoro-5-nitrotoluene; 3-fluorostyrene; 3,5-difluoroaniline; 2,2,2-trifluoroethylacrylate; 3-(trifluoromethoxy)-acetophenone; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; 1-fluorobutane; 1,1,2,2,3,3,4,4-octafluorobutane; 1,1,1,3,3-pentafluorobutane; perfluoro-4-methylquinolizidine; perfluoro-N-methyl-decahydroquinone; perfluoro-N-methyl-decahydroisoquinone; perfluoro-N-cyclohexylpyrrolidine; tetradecaperfluoroheptane; dodecaperfluorocyclohexane; perfluoromethane; perfluoroethane; perfluoropropane; perfluorobutane; perfluoropentane; perfluorohexane; perfluoroheptane; perfluorooctane; perfluorononane; perfluorodecane; perfluorododecane; perfluoro-2-methyl-2-pentene; perfluorocyclohexane; perfluorodecalin; perfluorododecalin; perfluoropropylene; perfluorocyclobutane; perfluoro-2-butyne; perfluoro-2-butene; perfluorobuta-1,3-diene; perfluorobutylethyl ether; bis(perfluoroisopropyl) ether; bis(perfluoropropyl) ether; perfluorotetrahydropyran; perfluoromethyl tetrahydrofuran; perfluoro

t-butyl methyl ether; perfluoro isobutyl methyl ether; perfluoro n-butyl methyl ether; perfluoro isopropyl ethyl ether; perfluoro n-propyl ethyl ether; perfluoro cyclobutyl methyl ether; perfluoro cyclopropyl ethyl ether; perfluoro isopropyl methyl ether; perfluoro n-propyl methyl ether; perfluoro diethyl ether; perfluoro cyclopropyl methyl ether; perfluoro methyl ethyl ether; perfluoro dimethyl ether; sulfur hexafluoride; and selenium hexafluoride.

117.(Currently amended) The method of claim ~~116~~ 116 wherein said administering step is conducted concurrently with said applying step.

118.(Previously presented) The method of claim 116 wherein said applying step is conducted prior to said administering step.

119.(Currently amended) A method for delivering a therapeutically beneficial compound into a cell in vitro or in vivo, comprising
administering to the cell a composition, the composition comprising said therapeutically beneficial compound ~~to be delivered~~ and an organic halide; and
applying ultrasound to said cell at 200-500 milliwatts per cm².

120.(Currently amended) The method of claim 119 wherein said therapeutically beneficial compound ~~to be delivered~~ is selected from the group consisting of mitotic inhibitors, a vinca alkaloid, radiopharmaceutical, radioactive iodine, phosphorus isotopes, cobalt isotopes, hormones, progestins, estrogens, antiestrogens, antihelminthics, antimalarials, antituberculosis, immune sera, antitoxins, antivenins, rabies prophylaxis products, bacterial vaccines, viral vaccines, aminoglycosides, respiratory products, xanthine derivatives, theophylline, aminophylline, thyroid therapeutics, iodine salts, anti-thyroid agents, cardiovascular products, chelating agents, mercurial diuretics, cardiac glycosides, glucagons, blood products, parenteral iron, hemin, hematoporphyrins, targeting ligands, peptides, antibodies, antibody fragments, biological response modifiers, muramyl dipeptide, muramyl tripeptide, microbial cell wall components, lymphokines, bacterial endotoxin, lipopolysaccharide, macrophage activation factor, subunits of bacteria, the synthetic dipeptide N-acetyl-muramyl-L-alanyl-D-isoglutamine, antifungal agents, ketoconazole, nystatin, griseofulvin, flucytosine (5-fc), miconazole,

amphotericin B, toxins, ricin, immunosuppressants, cyclosporins, antibiotics, b-lactam, sulfazecin, hormones, growth hormone, melanocyte stimulating hormone, estradiol, beclomethasone dipropionate, betamethasone, betamethasone acetate, betamethasone sodium phosphate, betamethasone disodium phosphate, betamethasone sodium phosphate, cortisone acetate, dexamethasone, dexamethasone acetate, dexamethasone sodium phosphate, flunisolide, hydrocortisone, hydrocortisone acetate, hydrocortisone cypionate, hydrocortisone sodium phosphate, hydrocortisone sodium succinate, methylprednisolone, methylprednisolone acetate, methylprednisolone sodium succinate, paramethasone acetate, prednisolone, prednisolone acetate, prednisolone sodium phosphate, prednisolone tebutate, prednisone, triamcinolone, triamcinolone acetonide, triamcinolone diacetate, triamcinolone hexacetonide, fludrocortisone acetate, oxytocin, vasopressin, vitamins, cyanocobalamin neonic acid, retinoids, retinol palmitate, a-tocopherol, peptides, enzymes, manganese superoxide dismutase, alkaline phosphatase, anti-allergens, amalexanox, anticoagulation agents, phenprocoumon, heparin, tissue plasminogen activators (TPA), streptokinase, urokinase, circulatory drugs, propranolol, metabolic potentiators, glutathione, antibiotics, p-aminosalicylic acid, isoniazid, capreomycin sulfate cycloserine, ethambutol hydrochloride ethionamide, pyrazinamide, rifampin, streptomycin sulfate dapson, chloramphenicol, neomycin, ceflaxor, cefadroxil, cephalixin, cephradine erythromycin, clindamycin, lincomycin, amoxicillin, ampicillin, bacampicillin, carbenicillin, dicloxicillin, cyclacillin, picloxicillin, hetacillin, methicillin, nafcillin, oxacillin, penicillin (G and V), ticarcillin rifampin, tetracycline, antivirals, acyclovir, DDI, Foscarnet, zidovudine, ribavirin and vidarabine monohydrate, antianginals, diltiazem, nifedipine, verapamil, erythritol tetranitrate, isosorbide dinitrate, nitroglycerin (glyceryl trinitrate), pentaerythritol tetranitrate, antiinflammatories, diflusal, ibuprofen, indomethacin, meclofenamate, mefenamic acid, naproxen, oxyphenbutazone, phenylbutazone, piroxicam, sulindac, tolmetin, aspirin, salicylates, antiprotozoans, chloroquine, hydroxychloroquine, metranidazole, quinine meglumine antimonite, antirheumatics, penicillamine, narcotics, paregoric, opiates, codeine, heroin, methadone, morphine, opium, cardiac glycosides, deslanoside, digitoxin, digoxin, digitalin, digitalis, neuromuscular blockers, atracurium nesylate, gallamine triethiodide, hexaflorenium bromide, metrocurine iodide, pancurium bromide, succinylcholine chloride (suxamethonium

chloride), tubocurarine chloride, vecuronium bromide, sedatives, amorbarital, amobarbital sodium, aprobarbital, butabarbital sodium, chloral hydrate, ethchlorvynol, ethinamate, flurazepam hydrochloride, glutethimide, methotrimeprazine hydrochloride, methypylon, midazolam hydrochloride, paraldehyde, pentobarbital, pentobarbital sodium, secobarbital sodium, tulbutal, temazepam and trizolam, local anesthetics, bupivacaine hydrochloride, chloroprocaine hydrochloride, etidocaine hydrochloride, lidocaine hydrochloride, mepivacaine hydrochloride, procaine hydrochloride, tetracaine hydrochloride, general anaesthetics, droperidol, etamine hydrochloride, methohexital sodium, thiopental sodium, antineoplastic agents, methotrexate, fluorouracil, adriamycin, mitomycin, ansamitomycin, bleomycin, cystein arabinoside, arabinosyl adenine, mercaptopolylysine, vincristine, busulfan, chlorambucil, azidothymidine, melphalan, PAM, L-PAM, phenylalanine mustard, mercaptopurine, mitotane, procarbazine hydrochloride dactinomycin (actinomycin D), danorubicin hydrochloride, dosorubicin hydrochloride, taxol, plicamycin (mithramycin), aminoglutethimide, estramustine phosphate sodium, flutamide, leuprolide acetate, megestrol acetate, tamoxifen citrate, testolactone, trilostane, amsacrine (m-AMSA), asparaginase, etoposide (VP-16), interferon a-2a, interferon a -2b, teniposide (VM-26), vinblastine sulfate (VLB), vincristine sulfate, hydroxyurea, procarbaxine, dacarbazine and contrast agents.